attempting to repeat the work of Acosta, of Colombia, who has reported that an extremely large percentage of patients gave a positive complement-fixation test, using an alcoholic extract of a bacillus isolated from the blood stream of a patient as antigen. It is not felt that any report can be given at this time as much more work is required before a decision can be arrived at.

The patients are given every comfort and, while a certain number abscond for one reason or another, there are many others who regard Carville as their home and wish to return. All outgoing mail is sterilized. During the year there were some 135,624 pieces of mail handled. Twenty-six magazines and 9 daily papers are received regularly for the patients' library. For the blind patients there are radios, baseball supplies, soft balls, etc., for their amusement, bought from the patients' benefit fund. There is also a dance orchestra, which is paid from this fund. Altogether, the report seems encouraging.

Just why there is so much public terror over leprosy has never been quite clear. It causes terrible deformities, and was for many years considered incurable. Doubtless, however, some of the unreasoning fear of it has come down from biblical times. It may be said with certainty that syphilis is now much more of a menace to civilization from every standpoint than is leprosy. Is it too much to hope that this *Journal* will be able to report at a time not too far distant that there are only some 500 cases of syphilis in the country?

REFERENCE

1. *Pub. Health Rep.*, Nov. 18, 1938.

MARY MALLON

THE death of Mary Mallon, known all over the world as "Typhoid Mary," occurred on Friday, November 11, at the Riverside Hospital, North Brother Island, New York, at the age of 70 years. Her story carries many lessons. For 31 years she has been under the surveillance of the medical authorities through no fault of her own. Many of her last years were spent in a detention hospital to which she was first committed on March 19, 1907. During all these years she was a menace to her fellow men, although entirely innocent of any wrong doing, and like the leper of old, she was branded "Unclean." It is not strange that she was bitter and defiant, and sought legally to escape from detention and to dodge the health authorities, in which she was too often successful, and in this she was reprehensible.

She was the first known typhoid carrier of the United States, and her detection was due to the unusually fine piece of epidemiological work done by George A. Soper, Consulting Engineer, and a Fellow of this Association. At the time of her detection in 1907, she had been the cause of seven outbreaks, with 26 cases of typhoid fever during 7 years. In the course of her career, 30 other cases were believed to be directly, and one probably indirectly, due to her—a total of 57, among whom there were 3 deaths.

There is some reason to go to this extent into the details of her case, since the newspapers very generally have been giving the Germans credit for the discovery of the typhoid fever carrier. The first record we have of typhoid carriers and their danger to the community was given by Horton-Smith, in England, in his Goulstonian Lectures, in 1900. He stressed the danger of the chronic urinary carriers, and called attention to their etiological importance. In November, 1902,

Robert Koch gave his famous address on the subject. At that time there was a great deal of typhoid fever in Southwest Germany, including Trier, the Bavarian Pfalz, and in Alsace-Lorraine—so much so that they were a menace to other parts of the country through migration. Koch pointed out that the chief source of infection to others was the patient and the convalescent, and urged that patients should be made sterile before release. He considered ambulant and abortive cases of great importance. Under his directions bacteriological stations were set up, the first one at Trier, in 1903, under Frosch. The investigation revealed that the intestinal carrier was the most important because the most frequent, and for the first time the suggestion was made by Frosch that the typhoid organism might be capable of leading a prolonged saprophytic existence in the intestine. In 1904 Drigalski proved this hypothesis. His work also showed the significance of atypical typhoid fever in children and went further to establish the dangerous importance of ambulant, abortive and unrecognized cases.

In the last quarter of a century in this country typhoid fever has dropped from a leading position as a cause of death to one of minor importance.* We have been warned by Dublin and Lotka that this brilliant victory over typhoid fever may lull us into a feeling of false security as the disease still causes a great many deaths in certain areas. In the United States it is most prevalent in the larger villages and smaller towns, with less than 10,000 inhabitants. From 1930 to 1932 the rate in these small communities, for whites, was 4.2 per 100,000 against 3.6 for rural areas, and 1.9 for the larger cities. Among the colored, it was 17.5 per 100,000 for small places, 13.6 for rural areas, and 6.3 for the larger cities.

This advice is emphasized by the recent report of endemic typhoid fever in the Department of the Gironde, France. Although the local water supplies, especially in the rural districts, are in many cases unsatisfactory, the zone in which the supplies are best controlled shows the largest number of cases. The inevitable conclusion is that endemic typhoid fever in this district is due to some other factor than the water supply. In the United States unquestionably the purification of the water supply and vaccination have been the two factors which have led to its great reduction.

That the carrier problem is still to be reckoned with is clearly shown by a recent report from the State Department of Health of New York. In 1937, there were 398 typhoid carriers under supervision in the upper part of New York State, exclusive of those in state institutions. This was an increase of 18 over the number for 1936. Twenty-nine of these were discovered through the study of outbreaks and three outbreaks of the disease were traced to previously unrecognized carriers. One has only to glance over the indices of the current journals and note the number of outbreaks due to carriers in institutions as well as the general population.

There is no need at this time and place to go further into the history of Mary Mallon, which has been given in considerable detail and accuracy in the public press. It is good to note that in later years she lost much of her bitterness and lived a fairly contented if necessarily restricted life. She always refused the one operation which might have cured her. When she was declared a carrier she

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* For Metropolitan policy holders the death rate for 1935 was 1.1 per 100,000 as compared with 22.1 in 1911. The rate was slightly higher for the general population.

dropped most of her friends and never revealed the story of her life or origin. She evidently found consolation in her religion and all are glad that she is now at perfect peace in the bosom of the church to which she gave her faith and loyalty.

ENGINEERING SERVICE IN HEALTH DEPARTMENTS

FOR the past decade all but four or five of the least populated states have had engineering divisions in their state health departments, while in municipal health departments only one-fourth of the 211 cities with a population of 50,000 or over, employ engineers, and less than 40 per cent of the 37 largest cities of the United States with a population of 250,000 or over, have one or more public health engineers in their health departments.

It is of interest to note, therefore, the announcement appearing elsewhere in this issue that a new organization known as the " Conference of Municipal Public Health Engineers " was formed at the Kansas City meeting. Such an organization should stimulate better engineering procedures through an exchange of ideas and opinions among its members, and by meeting on the day immediately preceding the annual meeting of the American Public Health Association, should increase the membership of the Engineering Section of that body. While the state sanitary engineers are wrestling with standards and fundamentals and attempting to direct engineering programs on a broad scale, the municipal engineers are faced with detail problems of promoting and enforcing specific sanitation programs. The type of problems, therefore, facing these two types of public health engineers, while fundamentally similar, are actually quite different.

There seems to be quite a definite need for this Conference of Municipal Health Engineers and we wish them all success with their new organization.